REMARKS

Prior to this communication, claims 1 – 44 are pending in the application. Claims 1 – 4, 7 – 11, 14 – 17, 20 – 22, 25, 26, 30 – 32, 35 – 37, and 40 – 43 are rejected, and claims 5, 6, 12, 13, 18, 19, 23, 24, 27 – 29, 33, 34, 38, 39, and 44 are objected to. By this amendment, Applicants are amending claims 1, 4 – 6, 8, 11 – 13, 15, 18, 19, 21, 23, 24, 26, 27, 30, 33, 34, 36, 38, 39, 41, and 42; thus leaving claims 2, 3, 7, 9, 10, 14, 16, 17, 20, 22, 25, 28, 29, 31, 32, 35, 37, 40, 43, and 44 unchanged. Reexamination and reconsideration of claims 1 – 44 in view of the amendments and remarks contained herein are respectfully requested.

Specifically, Claims 1 – 4, 7 – 11, 14 – 17, 20 – 22, , 30 – 32, and 35 – 37 are rejected under 35 U.S.C 102(b) as being anticipated by U.S. Patent No. 5,209,229 ("Gilli").

Amended claim 1 requires, among other things, the act of "selecting a data manipulation process comprising a lossy compression process and a lossless compression process based on the diagnostic information." Gilli, however, discloses an implantable device that detects atrial signals 23 and ventricular analog signals 33, respectively, from the heart 11 and converts the detected signals to digital signals via leads 21, and 31, respectively. (Col. 7, lines 1 – 5, Col. 8, lines 40 – 45.) The analog signals are then fed into an atrial sensing circuit 25 and a ventricular sensing circuit 35 of a pacemaker 17, respectively, for processing. The processed atrial and ventricular signals are further processed by a control 39 of the pacemaker 17 to produce an atrial sense signal and a ventricular sense signal via lines 45 and 49. The microprocessor 19 then receives the signals on lines 45 and 49 from pacemaker 17, performs operations such as arrhythmia detection, and produces outputs such an atrial pace control, and a ventricular pace control. (Col. 9, lines 32 – 35.) According to the Office, a lossy process is interpreted "to comprise sending a pacing pulse," and a lossless process is interpreted "to comprise not sending a pacing pulse." (Section 3 of the Action.) However, Gilli does not teach or suggest the act of "selecting a data manipulation process comprising a lossy compression process and a lossless compression process based on the diagnostic information" defined by independent claim 1. Accordingly, independent claim 1 is allowable.

Claims 2 – 7 are dependent from claim 1. Accordingly, claim 1 – 7 include patentable subject matter for the reasons set forth above with respect to claim 1. Additionally, claim 2 – 7 include additional limitations that, in combination with claim 1, are believed to be inventive.

Similarly, amended Claim 8 requires, among other things, the act of "selecting a data manipulation process comprising a lossy compression process and a lossless compression process based on the diagnostic information." For the same reasons set forth above with respect to claim 1, independent claim 8 is allowable. Dependent claims 9 – 14 are dependent from claim 8, and therefore are patentable.

Amended claim 15 requires, among other things, "a selector module that selects a data manipulation process comprising a lossy compression process and a lossless compression process based on the diagnostic information." For the same reasons set forth above with respect to claim 1, independent claim 15 is allowable. Dependent claims 16 – 20 are dependent from claim 15, and therefore are patentable.

Amended claim 30 requires, among other things, "a data manipulator module that compresses the asynchronous component and the synchronous component according to the component type and the data manipulation process selection of the selector module." For the same reasons set forth above with respect to claim 1, independent claim 30 is allowable. Dependent claims 31 – 35 are dependent from claim 30, and therefore are patentable.

Amended claim 36 requires, among other things, "a selector module that selects a data manipulation process comprising a lossy compression process and a lossless compression process based on the diagnostic information." For the same reasons set forth above with respect to claim 1, independent claim 36 is allowable. Dependent claims 36 – 39 are dependent from claim 36, and therefore are patentable.

Claims 25, 26, and 40 – 43 are rejected under U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,348,245 ("Lee et al.").

To establish a *prima facie* case of obviousness, three basic criteria must be met. *M.P.E.P.* § 706.02(j) and 2143.

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable

expectation of success must be both found in the prior art, not in applicant's disclosure.

Id. See also In re Rougget, 149 F.3d 1350, 1355 (Fed. Cir. 1998) ("To reject claims in an application under section 103, the Office must show an unrebutted *prima facie* case of obviousness. In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent.")

Lee et al. teach a system for recording trigger events and noise in conjunction with the recording of physiological signals in an implantable medical device. In one embodiment, recorded trigger and noise data is provided for display to a physician along with reconstructed ECG data to facilitate interpretation of the ECG signal. Digitized ECG samples that are outside of a predetermined range are discarded during the sampling process so that one or more ranges of encoded values are available for use in encoding noise and trigger information. This non-physiologic data may be limited in size to individual point values of the ECG signal. (Abstract, Lee et al.)

Applicants contend that the Office has not set forth a proper *prima facie* case of obviousness in section 5 of the pending action. For example, the Office must show that the prior art reference (or references when combined) teaches or suggests all the claim limitations. Claims 25 and 40 are repeated below:

> 25. (Original) A method of automatically selecting a data compression scheme, the method comprising:
> receiving raw data including an asynchronous component and a synchronous component;
> separating the asynchronous component from the synchronous component;
> classifying a data condition based on the asynchronous component; and
> selecting a data compression scheme based on the data condition.
>
> 40. (Original) A method of automatically selecting and applying data compression scheme, the method comprising:
> receiving raw data including an asynchronous component and a synchronous component;
> separating the asynchronous component from the synchronous component;
> classifying a data condition based on the asynchronous component;
> selecting a data compression scheme based on the data condition; and
> compressing the asynchronous component and the synchronous component based on the data compression scheme selected.

Lee et al. do not teach or suggest all the limitations as claimed in independent claims 25 and 40. Specifically, among other things, the Office did not show that Lee et al. teach or suggest the acts of classifying a data condition based on the asynchronous component, and selecting a data compression scheme based on the data condition. In fact, Lee et al. teach that the choice of a compression technique is arbitrary. Specifically, Lee et al. state that "any compression technique may be employed for storing the ECG to memory" or "a variation of the tuning point algorithm" may be applied to the ECG data at circuit 35, or memory controller 8. (Col. 6, lines 25 – 35.) Therefore, while the ECG signal may include both synchronous and asynchronous components, Lee et al. teach away from "selecting a compression scheme based on the data condition," and suggest using the same compression scheme for compression of both synchronous and asynchronous components of the ECG.

Secondly, Lee et al. teach that the "QRS detection circuit 43 monitors the analog output of amplifier circuit 45, providing an output signal to either the microprocessor 41 or the bus 47 as desired." (Col. 7, lines 48 – 51, and FIG. 4.) Lee et al. also teach that the "data compression circuit may preferably be included as part of the A/D circuit [42]." (Col. 7, lines 59 – 60, and FIG. 4.) That is, Lee et al. teach that the data compression circuit in the A/D circuit may compress the raw data received by the implantable device, and separately, that the microprocessor directly processes the data output from the QRS detection circuit if desired. Therefore, if Applicants were to (and the Applicants do not) consider the QRS detection circuit output of Lee et al. as classified data, the QRS detection circuit outputs QRS data rather than "a data condition based on the asynchronous component" as claimed by Applicants. Still further, since all raw data is compressed at the data compression circuit of the A/D circuit, Lee et al. do not teach or suggest any compression scheme selection. In fact, Lee et al. teach that any (but not a selected) data compression scheme is acceptable, or "a variation of the tuning point algorithm" may be applied to the ECG data. (Col. 6, lines 25 – 35.) As a result, Lee et al. teach away from "selecting a data compression scheme based on the data condition."

Thirdly, Lee et al. teach that indicator flags or markers may be included in the ECG data in the memory of the implanted medical device. (Col. 10, lines 13 – 15.) Specifically, step 52 classifies any potential noise in the input data. (Col. 10, lines 19 – 20.) However, when a trigger event has occurred, or a patient-activated trigger has been set, the device will assign specific memory locations to the data and the indicators used. Otherwise, "the memory can continue to

store signals as may occur using a circular buffer configuration in step 53." (Col. 10, 25 – 32.) If noise classification were to be considered classification of data condition, the data that had been classified does not provide a basis for selecting a data compression scheme as claimed. Therefore, Lee et al. do not teach or suggest the acts of classifying a data condition based on the asynchronous component, and selecting a data compression scheme based on the data condition, as claimed.

Furthermore, FIG. 6 shows that the filter 63b for the ECG may remove unwanted noise from the ECG signal, and the filtered ECG signal "be digitized and compressed, if preferred, in blocks 64b and is then provided to the data block 69." (Col. 11, lines 10 – 17.) Meanwhile, the same raw data is filtered for noise at block 63a, the filtered noise is classified in 64c and assigned a digital value in 66. The classified noise is then stored in the memory. That is, only the ECG signal is compressed with any compression scheme, and the noise is classified and stored but not compressed. Thus, Lee et al. teach away from "selecting a data compression scheme based on the data condition," and "selecting a data compression scheme based on the data condition," as claimed. As a result, Lee et al. teach that any data compression scheme is acceptable for compression of the ECG signal, but the selection of the data compression scheme is arbitrary and is not based on the data condition.

Still further, according to the Office, "one of ordinary skill in the art would have found it obvious to select a data compression scheme based on the data condition because Lee et al. teach storing sampled amplitude readings of the electrogram signal, and using a lossy compression scheme whereby some amplitude measurements are stored." (Section 5 of the Action.) However, Lee et al. specifically state that they store "sampled amplitude readings of the electrogram signal, but employ a lossy compression scheme whereby some amplitude measurements are stored, and some intervening measurements are not." (Col. 11, lines 33 – 37.) Thus, the ECG signal, which can include both synchronous and asynchronous components, is sampled by the same lossy compression scheme. Therefore, Lee et al. again teach away from "separating the asynchronous component from the synchronous component" of the raw data, "classifying a data condition based on the asynchronous component," and "selecting a data compression scheme based on the data condition," as claimed.

Therefore, claims 25, and 40 and dependent claims 26 – 29 and dependent claims 41 – 44 are allowable.

CONCLUSION

Entry of the Amendment and allowance of claims 1 – 44 are respectfully requested. The undersigned is available for telephone consultation at any time during normal business hours.

Respectfully submitted,

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